

ABSTRACT OF THE DISCLOSURE

A PON transmission system and a dynamic band assignment system to be employed in the same which permits high speed band variation, to effectively use up band in PDS period, and to adapt to variation of traffic type. The PON transmission system includes a plurality of subscriber unit including optical network unit processing portions for terminating an optical communication network and a station unit including optical line terminal processing portion terminating the optical communication network. The system also includes means for monitoring increasing and decreasing of idle cells, means for recognizing accumulation of cell in the optical network unit processing portion depending upon the result of monitoring, and means for individually handling band process in the optical communication network according to necessary or unnecessary of band restriction depending upon traffic type.